Small Business Innovation Research/Small Business Tech Transfer

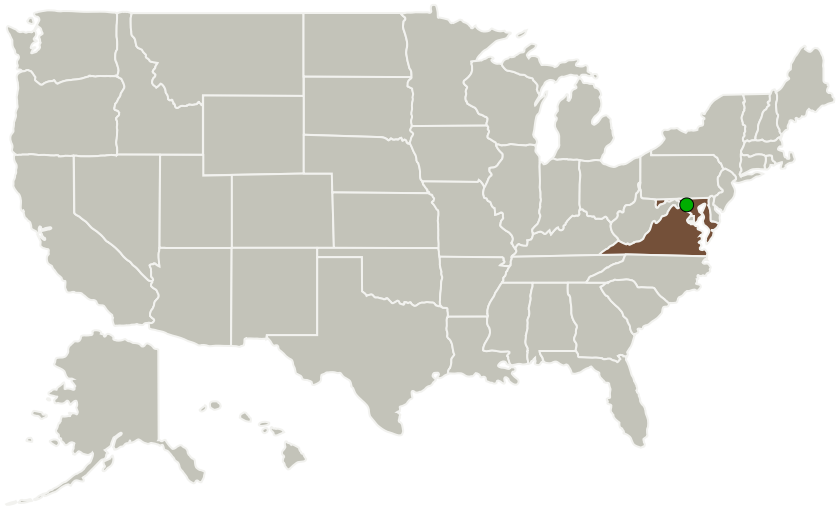
Cold Weather Technology Development for Low Altitude Ultra-Long Endurance Applications, Phase I

Completed Technology Project (2010 - 2010)

Project Introduction

Currently, wide area coverage with manned aircraft, or existing UAS, requires expensive logistical operations and many flight sorties, which are made especially difficult if operating from remote airfields in inhospitable climates. There is currently a need for a low-altitude long endurance unmanned aircraft that can provide the expansive coverage necessary for cryospheric investigations. Extreme cold places unique requirements on aircraft if they are to operate consistently and reliably in these environments. This Phase I SBIR will, through design, analysis and test activities, determine the feasibility and system impact of making a low altitude ultra-long endurance UAS compliant with varying levels of minimum temperature requirements.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Vanilla Aircraft, LLC	Lead Organization	Industry	Falls Church, Virginia
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

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Primary U.S. Work Locations	
Maryland	Virginia

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140040)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Vanilla Aircraft, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

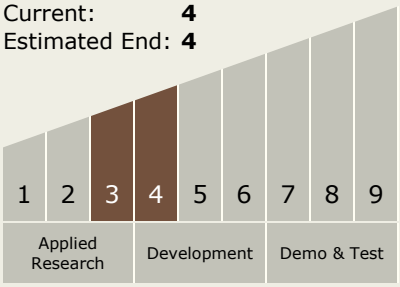
Carlos Torrez

Principal Investigator:

Daniel Hatfield

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX13 Ground, Test, and Surface Systems
  - TX13.4 Mission Success Technologies
    - TX13.4.1 Mission Planning

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System